

AMPLIFIERS & MOUNTS

FAMILY OF PRODUCTS OVERVIEW
FROM ULTRALIFE



ULTRALiFE®

ULTRALIFE®



NEW 20W AMPLIFIER AND
IN-COUNTRY SUPPORT

ABOUT ULTRALIFE CORPORATION

ULTRALIFE CORPORATION serves its markets with products and services ranging from power solutions to communications and electronics systems. Through its engineering and collaborative approach to problem solving, ULTRALIFE serves government, defense and commercial customers across the globe.

Headquartered in the USA, the company’s business segments include: Battery & Energy Products and Communications Systems. ULTRALIFE has operations in North America, Canada, Europe and Asia.

ULTRALIFE has developed a family of combat proven, tactical communication equipment to meet the LOS and SATCOM requirements and demands of dismounted close combat soldiers, vehicle-based soldiers, signals platforms, JTAC and special forces. The innovative solutions provided by the Communications Systems engineering team factor in concerns of size, weight, and power (SWaP) heavily in their design.



PLUS OTHER 20W
AMPLIFIERS & MOUNTS

YOUR NUMBER ONE PARTNER FOR MILITARY COMMUNICATION

SERVING THE MISSION

ULTRALIFE works with clients in mission critical fields (such as military, medical, industrial, safety and security) where failure is not an option.



TRUSTED BY GOVERNMENTS & OEMS ACROSS THE GLOBE

INTRODUCTION

For over 15 years, ULTRALIFE has been manufacturing both dismantled and vehicle-mounted amplifiers to serve a wealth of military radio and other communication needs.

To reduce the soldier's burden; consideration for size, weight and power is paramount and ULTRALIFE has designed its equipment to be ergonomically simple, robust, radio agnostic and enduring.

Get an overview of our product range below or scan the QR-Codes to visit the relevant web page(s) and view technical specifications.

SMALL & LIGHT AMPLIFIER



The A-2303 amplifier continues the RF sensing technology ULTRALIFE were first to develop over 20 years ago. All necessary radio interfacing is accomplished via a single RF cable. From here the amplifier then automatically performs all necessary detection and classification to provide a faithful reproduction of the radio RF with the desired amplification. The A-2303 is compatible with legacy waveforms as well as many modern proprietary and military waveforms. Optimized for use with low power PRR radios, delivering 20 watts with ~.75 watt of RF drive power. Remote

On/Off control. Power for the optional active cooling module is provided on the bottom of the amplifier.



IN-COUNTRY SUPPORT

Understanding the need for in-country support requirements to satisfy autonomy of maintenance operations to help ensure operational tempo is maintained, ULTRALIFE has designed the new A-2303 RF Amplifier to be fully supported outside the confines of the ULTRALIFE factory. A fully deployable instrument stack (A-2303-ICS) is available for use with the amplifier, the core instrument being the R&S®ZNL Vector Network Amplifier (VNA). All of the instruments are NIST Traceable. Remote access allows for collaborative technical discussion with your personnel.



NEW WAVEFORM AMPLIFIER



The A-2206 is an evolution in RF amplification. Modern waveforms are becoming more complex and much faster, so a new breed of amplification is necessary for these and future waveforms. Advanced detection, classification and timing is achieved with implementation of the Intel® Arria® 10 FPGA. The all-new A-2206 answers the call for performance, compatibility, and future-oriented design.

Features, like the embedded ethernet controller, allow for world-wide remote control, and programming & maintenance. The advanced, user

replaceable graphics display, promotes advanced configuration in the hands of the operator and status of the amplifier and power source. User replaceable RF connectors reduce downtime and logistics commonly necessary for repair.

Optional in-country support, down to the component level, will be supported by training, documentation, LabVIEW routines and test instrumentation. This level of support is seldom seen for ancillary products but is critical to supporting readiness.



LEGACY AMPLIFIER

ULTRALIFE continue to manufacture the popular A-320V3A amplifier that serves the 30-512 MHz frequency range used by modern radios. The A-320V3A features self-diagnostics with dimmable system indicators to monitor power and performance status. It also supports the latest TDMA waveforms including Soldier Radio Waveform (SRW), Advanced Networking Wideband Waveform (ANW2®), and an Enhanced Position & Location Reporting System (EPLRS). The amplifier maintains

support for legacy communications modes including HAVEQUICK, SINCGARS, and DAMA. It can be vehicle mounted in the A-320HVA (see page 5) or A-320QM (see page 6) or LPAS-320U (see page 6).



RADIO CHARGER & MOUNT



The MRC-UVA-V1 is a radio charging solution for vehicle communications that enables users to employ the same handheld radio while inside the vehicle, or outside on foot.

It is compatible with new radios (such as Harris PRC-163, IMBTR, MBITR2, ViaSat PRC-161 and Tactical Network Rover), as well as legacy Harris and Thales radios (plus other radios and devices using the same batteries).

It can be used in tactical or non-standard vehicles to provide radio mounting and charging. As an added safety feature, the MRC-UVA-V1 monitors various parameters of the radio's battery via the SMBus and DQ communication channel to assure safe battery charging.

Input voltage: 10-40VDC (150W max)



RADIO & AMPLIFIER MOUNT

The A-320HVA Handheld Vehicle Adapter is the ultimate solution for vehicle communications. It allows soldiers to use the same radio for both mounted and dismantled requirements.



Additionally, it can also be used to house the A-320* amplifier, especially useful when in a vehicle.

It is designed specifically for "jerk-and-run" scenarios, and compatible with widely fielded radios from Thales and others. The A-320HVA features a universal pocket that accepts up to 16 radios (including variants).

The A-320HVA can be used in tactical or non-standard vehicles as it is capable of operating from any 11-36 volt DC power supply. Additionally, the power supply allows the user to attach an amplified speaker, such as the MRC-67A, to provide an audio interface.

*A-320HVA is compatible with A-320V1, A-320V2-A and A-320V3 only.



AMPLIFIER MOUNT



A-320QM can be used to mount an amplifier to most military vehicles and base stations. The amplifier can be quickly and easily mounted using a latch that can be operated using one hand.

The A-320QM works with the A-320V3A (sold separately, see page 5), as well as legacy ULTRALIFE amplifiers.

Lightweight (under 1lb. without amp), the A-320QM features coiled steel isolators and a nylon amp holder with steel reinforcement, designed to meet or exceed MIL-STD-810G standards for shock/vibration.



RADIO & AMPLIFIER

LPAS-320U is a self-contained AC/DC radio and amplifier solution for vehicle or dismounted use. Its versatility and low weight (5.9Kg or 13lbs) allows it to be dismounted for use in FOB, safe houses and HQ.



LPAS-320U includes the A-320V3A amplifier and universal radio pocket.

It can be powered by either the MRC-93 (using AC/DC input power or an optional battery) or MRC-82A (which uses ULTRALIFE's rechargeable UBI-2590 batteries, see page 7).



An internal charger allows the MRC-82A to recharge the battery while the transceiver is operating.

SPEAKER



MRC-67 series amplified speakers are rugged, waterproof audio speaker systems made to withstand tactical environments. The MRC- 67 series will monitor a single transceiver and/or encryption unit.

They are compatible with virtually any communication systems using the standard transceiver interface audio connections. A variety of power input configurations and colors* are available.

The MRC-67 series is ideal for tactical operations centers, SOTM systems, and vehicle use. The speaker's rugged construction allows for audio monitoring in demanding tactical environments. (*Available in green, black, gray or red)



LNA ADAPTER (MULTIBAND)



If there is a requirement for multiband operation, then the A-320DPA can be used. It simply clips (no tools required) onto the A-320V3A for dual port capability. The adapter allows for simultaneous connection of two separate RF antennas for differing frequencies. It also functions as

a Low Noise Amplifier (LNA) for UHF SATCOM transmission - providing approximately 10dB of gain. A-320DPA works with AN/PRC-148, AN/PRC-152, AN/PRC-154 and MBITR II radios.



POWER SUPPLY

The MRC-UPU0003 power supply has been designed to work with the AN/PRC- 117G radio. The two can be connected easily using the MRC-RMT0003 (sold separately, see 'Radio & Power Mount').

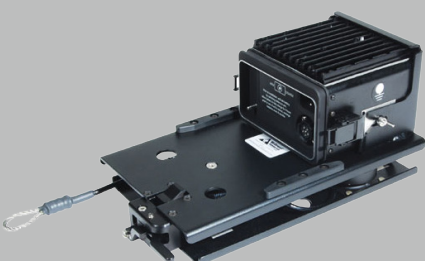


Virtually any AC or DC power source is compatible with this power supply, making it an ideal solution for providing uninterrupted power, anywhere.

When used with the AN/PRC-117G at an 8:1:1 duty cycle, the unit provides greater than 3 hours run time. Like all ULTRALIFE power supplies, this series is 85-250VAC/47-440 Hz ready and complies to MIL-STD-461E (for EMI) and MIL-STD-810 standards. Optional cables are available to extend application flexibility (see website).



RADIO & POWER MOUNT



The MRC-RMT0003 allows for easy installation of the AN/PRC-117G radio and ULTRALIFE MRC-UPU0003 (sold separately, see 'Power Supply'). This combination can be used in vehicles, HQ and fixed-site installations.

MRC-RMT0003 is equipped with an integrated security cable to lock the radio and MRC-UPU0003 to a mount. The MRC-RMT0003 integrated shock/vibration mount protects equipment from shock and vibration with integrated isolators between the bottom mounting plate and equipment mounting tray.

The MRC-RMT0003 features a quick-release latch that can be operated with one hand, making it ideal for "jerk-and-run" situations.



COMBINER



A-301-150 satellite radio combiner (diplexer) enables simultaneous transmission and reception of any two military UHF satellite radio channels (in the 243 – 318 MHz SATCOM band) on a single antenna.

Designed for continuous operation in tactical environments, the A-301-150 is packaged in a compact rugged, weatherproof housing. This allows it to be used everywhere from fixed site locations to boats, aircraft, vehicles, shelters, and racks.

The A-301-150 is ideal for SATCOM on the Move (SOTM) requirements where limited antenna availability may hinder operations (such as in maritime surface craft, vehicles, aircraft, and submarines).

The satellite radio combiner incorporates extensive transmit and receive filtering to ensure no performance degradation in either channel during simultaneous transmit and receive operations.



Multiple modes of operation provide users with flexibility while configuring communications networks. The A-301-150 also allows users to interface their own RF power amplifiers (up to 150 watts per channel).

CRESCENT SERVER

Crescent Server is one of the first body-worn, battery-powered edge computer servers that is capable of processing data locally and faster than most existing solutions.



Data that is processed on edge servers is not as susceptible to hacking as data that is in the cloud, making this form of computing ideal for military and law enforcement applications where data interception or manipulation could seriously affect the mission.

With sufficient computational power, memory and storage, Edge Computing is a viable solution for processing raw imagery data from overhead assets and video sensors. Further, real-time language translation and facial recognition is easily achieved local to the individual. On the person SIGINT solutions can be derived and acted upon in real-time. Heightened edge compute capabilities permits tackling large complex jobs, then moving the derived solutions via MANET radios to team members with other, less powerful, on the person compute to provide the team members the best opportunity for mission success.



XX90 RECHARGEABLE BATTERIES FOR COMMUNICATIONS SYSTEMS

NON-SMART



Referred to as the UBI-2590 core variant by its users; UBBL02-01 is a rechargeable Lithium-ion xx90 battery that contains two independent battery sections, which can be connected in either series or parallel by the end use device. In 30V 'series mode' the battery operates between 33.6V and 20.0V (28.8V average) and delivers 8.7Ah. In 15V 'parallel mode' the battery operates between 16.8V and 10.0V (14.4V average) and delivers 17.4Ah; making the UBBL02-01 a 250Wh battery!



UBBL02-01 is used in military communications devices including AN/PRC-117G, AN/PRC-117F, AN/PRC119 and AN/PSC-5D.

SMART



The UBBL10-01 is the same battery as UBBL02-01 but with the addition of ULTRALIFE's SmartCircuit™ technology that allows compatible devices and chargers to communicate with the battery via its SMBus v1.1 compliant interface.

UBBL10-01 is used in AN/PRC-117G, AN/PRC-117F, AN/PRC119, AN/PSC-5D & more.



SMART (ENERGY DENSE)

The UBBL13-01 is the highest energy density offering available in the UBI-2590 product family.

When the battery is configured by the end use device in a parallel mode (or 14.4V output), the user has access to 20Ah of discharge capability. Series mode connections result in a 28.8V



(average) output or 288Wh of useable energy! This is all possible without changing the dimensions or physical construction of the UBBL10-01 battery.





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